



Volunteer Lake Assessment Program Individual Lake Reports

PEA PORRIDGE POND, MIDDLE, MADISON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,856	Max. Depth (m):	13.4	Flushing Rate (yr ¹)	5.3
Surface Area (Ac.):	43	Mean Depth (m):	4.7	P Retention Coef:	0.45
Shore Length (m):	1,400	Volume (m ³):	831,500	Elevation (ft):	636

TROPHIC CLASSIFICATION

Year	Trophic class
1989	OLIGOTROPHIC
2001	MESOTROPHIC

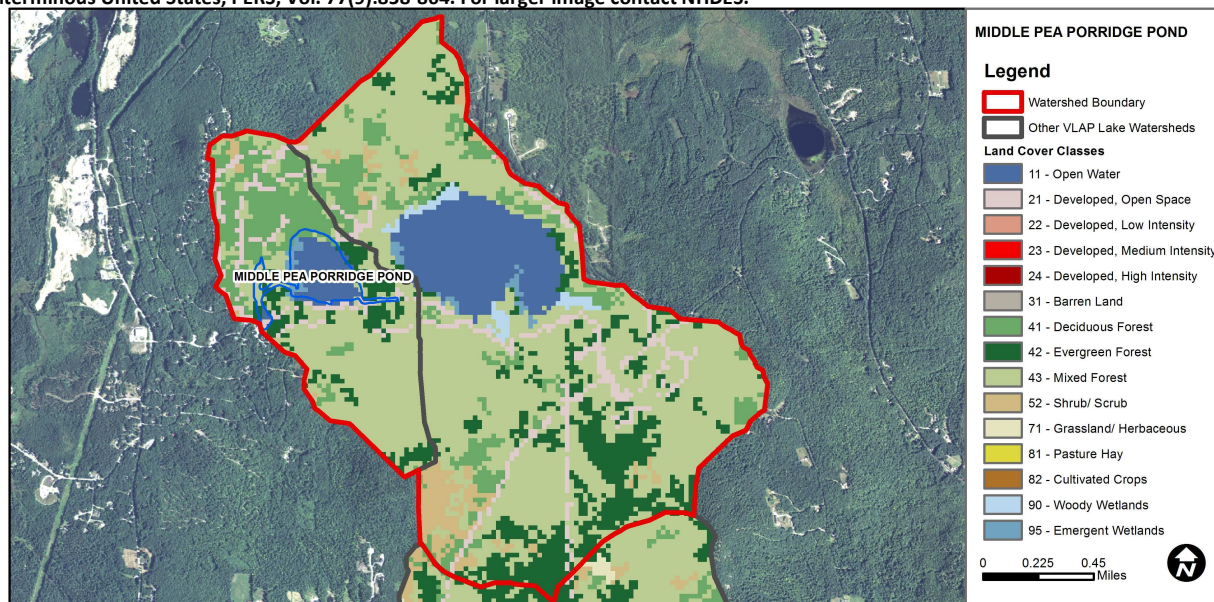
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	10.9	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	6.3	Deciduous Forest	11.92	Pasture Hay	0
Developed-Low Intensity	0.05	Evergreen Forest	13.67	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	51.2	Woody Wetlands	1
Developed-High Intensity	0	Shrub-Scrub	3.78	Emergent Wetlands	0.86



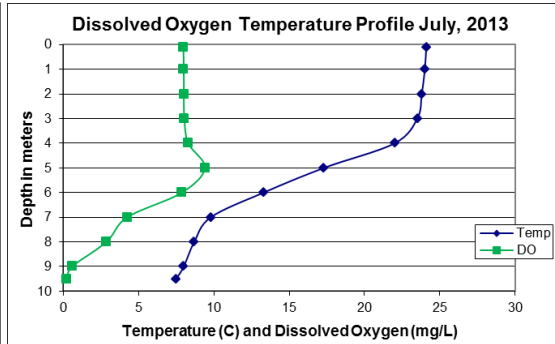
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

MIDDLE PEA PORRIDGE POND, MADISON, NH

2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- CHLOROPHYLL-A:** Chlorophyll levels decreased from June to August and were much less than the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity were slightly greater than the state median. Historical trend analysis indicates relatively stable epilimnetic conductivity with moderate variability between years. Chloride levels were elevated at Station #1b and slightly elevated at Stations #1 and 1a.
- E. COLI:** Beach E. coli levels were well below state standards for public beaches.
- TOTAL PHOSPHORUS:** Epilimnetic and metalimnetic phosphorus levels were low and much less than the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years. Hypolimnetic phosphorus levels were slightly elevated in July and August and turbidity was also slightly elevated. Tributary phosphorus levels were low.
- TRANSPARENCY:** Transparency improved from 2012, increased from June to August, and was greater than the state median. Historical trend analysis indicates relatively stable transparency with moderate variability between years.
- TURBIDITY:** Epilimnetic turbidity was slightly elevated in June potentially due to significant storm events. Hypolimnetic turbidity was slightly elevated potentially due to organic compounds released under anoxic conditions.
- pH:** pH levels were generally less than desirable range of 6.5 - 8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years.
- RECOMMENDED ACTIONS:** Try to address the elevated chloride levels at specific stations listed above to reduce the impact on in lake conductivity. The UNH Technology Transfer Center offers salt applicator certification through the Green SnowPro Program and offers a list of salt reduction best management practices. The increased frequency and intensity of storm events highlights the importance of reducing stormwater runoff from lake and watershed properties. DES' "Homeowner's Guide to Stormwater Management" is a good resource.



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L

Chlorophyll-a: 4.58 mg/m³

Conductivity: 40.0 uS/cm

Chloride: 4 mg/L

Total Phosphorus: 12 ug/L

Transparency: 3.2 m

pH: 6.6

Station	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m	Turb. ntu	pH
#1 Edelweiss Drive			16				NVS	VS	
#1a			19						
#1b Edelweiss Dr			59						
#2 Edelweiss Drive			9						
#4 Middle Shore Place			12						
Boulder Bch					3				
Edelweiss Bch					2				
Epilimnion	5.33	2.09	10	55.7		3	4.00	4.70	0.71
Metalimnion				52.7		8		0.77	6.27
Hypolimnion				59.0		15		2.16	6.10
Geneva Bch					4				
Inlet				47.3		8		1.20	6.41
Outlet				55.6		5		0.41	6.47

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data moderately variable.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
Conductivity	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.

